

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR(S) : James M. Ziobro
TITLE : **INTELLIGENT COLOR TO TEXTURE
CONVERTER**
APPLICATION NO. : 09/725,384
FILED : November 29, 2000
CONFIRMATION NO. : 6573
EXAMINER : Chante E. Harrison
ART UNIT : 2628
LAST OFFICE ACTION : January 10, 2008
ATTORNEY DOCKET NO. : A0125Q-US-NP
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THIRD PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The Applicant requests review of the final rejection mailed January 10, 2008, regarding the above-identified patent application. No amendments are being filed with this request. This request is being filed with a Notice of Appeal. The Applicant respectfully submits the following 5 pages including reasons for requesting a Pre-Appeal Review of the above-captioned matter.

Respectfully submitted,
FAY SHARPE LLP

April 10, 2008
Date


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Remarks

The indication in the Final Office Action mailed January 10, 2008, that **claims 4-9** are allowed and the indication that **claims 14** and **16-18** recite allowable subject matter is noted with appreciation. Nevertheless, the rejection of independent **claims 10** and **21**, as well as **claims 11-13, 15** and **19**, which depend from **claim 10**, and **claims 22** and **23**, which depend from **claim 21**, include **clear errors** and pre-appeal review is respectfully requested.

The Present Application

Briefly, the present application is directed toward methods and systems for providing black and white copies of documents that were intended to be printed in color. More particularly, the methods and systems of the present application seek to preserve information that was encoded in the color of portions of, for example, a bar or pie chart image while, at the same time, minimizing changes to the image so that the methods and systems may be appropriately provided in a "walk-up mode" of, for example, a photocopier.

The color information is preserved by replacing it with a subtle pattern or texture. However, the pattern or texture is **only applied to portions of the image that conflict with other portions of the image**. That is, while there are millions of colors or shades of colors possible in a color image, a typical black and white printer might only be able to produce 256 shades of gray. Accordingly, many colors must be mapped or represented by any particular shade of gray. The methods of the present application look for colors in an image that would be mapped to the same shade of gray. When colors are found that would be mapped to the same shade of gray, **those colors are classified as conflicting**, and the subtle texture or pattern is applied to only those portions of the black and white image associated with conflicting colors. **Indeed, only some of the conflicting colors need receive a pattern or texture**. For example, if an image includes two colors that would be mapped to the same shade of gray, only one of them need be modified to include a texture or pattern.

Accordingly, the method can be applied even to images that do not need the method, such as photographs, without noticeably distorting those images. Therefore, the method is appropriately applied in a "walk-up mode."

As recited in claim 10, the present application is related to an image processor operative to generate a single colorant version of a color image, the single colorant version including modulations **only where necessary** to distinguish **between conflicting colors**. The image processor includes an image analyzer operative to find and **classify conflicting colors** in the color image **as conflicting** and a gray scale modulator operative to add spatial modulations to single colorant versions **of only the conflicting colors** within the single colorant version of the color image.

The Cited Reference

In stark contrast, it is respectfully submitted that the cited reference to Ito discloses yet another example of an image processing apparatus that applies patterning to the black and white

versions of all of the colors represented in a black and white version of an image. As explained at column 3, lines 9-11, the system of Ito detects color components of the color original by using a hue signal in order to reproduce the color image in monochrome patterns. Ito uses a histogram (e.g., Fig. 7 and Fig. 17) of filtered or smoothed image histogram data (e.g., Fig. 5) to find three hue ranges associated with three peaks (column 7, lines 1-3). If the histogram includes four or more peaks, the additional peaks are associated with one of the three bigger peaks. For example, if the fourth peak is between two other peaks, it is combined with the peak associated with the smaller range (column 7, lines 3-67). Once the three ranges (e.g., the hues between B and C, E and F, and H and I in Fig. 7 or between B and C, E and F, and C and I in Fig. 17) (column 7, lines 48-61) are determined, the hue thresholds are loaded into comparators associated with patterns and the image is scanned a second time (column 6, lines 5-15). **Each pixel** is compared to the various **hue** thresholds to determine which range it is associated with (column 6, lines 13-31). That information is delivered to a selector which selects a pattern. The pattern data is output to a multiplier where it is multiplied by a value of a darkest portion of the pixel data (column 6, lines 31-40). Presumably, the result of that multiplication is used to drive a printing element. However, the applicant has been unable to find any discussion of this in Ito.

Contrary to the assertions of the Office Action, it is submitted that **Ito does not disclose** and image analyzer that is operative to find and classify conflicting colors or gray scale modulator operative to add spatial modulations to single colorant versions of only the conflicting colors within the single colorant version of the color image.

Clear Errors of the Advisory Action

The Advisory Action that was mailed March 18, 2008, refuses to enter Applicant's Amendment I, which was submitted electronically on February 21, 2008, which included amendments to **claims 10 and 21** and challenged the appropriateness of the finality of the Office Action of January 10, 2008.

The Advisory Action alleges that the amendments raise new issues because "Applicant failed to previously claim spatially modulating a plurality of image portions associated with a plurality of selected conflicting colors." It is respectfully submitted that this is a reference to amendments made to **claim 21** wherein the recitation: --selectively spatially modulating a portion of the single colorant version of the image that is associated with one of the conflicting colors, thereby generating a modulated single colorant version of the image-- was amended to read: --selectively spatially modulating only portions of the single colorant version of the image that are associated with selected ones of the conflicting colors, thereby generating a modulated single colorant version of the image--. In this regard and as pointed out on page 17 of Applicant's Amendment I, it is respectfully submitted that this amendment is supported throughout the specification, and by the recitation in allowable claim 4 of --applying at least one distinct spatial modulation to, and only to, at least one respective single colorant version of at least one of the conflicting colors in a single colorant version of the image--.

Accordingly, the assertion of the Advisory Action represents a **clear error** and Pre-Appeal Brief review is respectfully requested.

In a set of telephone communications from about March 25, 2008-April 4, 2008, the Examiner indicated that Applicant's Amendment I was refused entry for reasons related to the inclusion of the phrase --selected ones-- in **claim 21** as a replacement for the word "one" (see Applicant's Telephone Interview Summary which was filed electronically on April 8, 2008). The Examiner asserted that the specification does not support applying modulations to --selected ones-- of the conflicting colors.

However, when **claim 21** was originally added to the application in March of 2003, in response to a restriction requirement and has recited: --selectively modulating a portion of the single colorant version of the image that is associated with one of the conflicting colors-- from that time until now. **Moreover**, original **claim 1** recites: --selectively adding texture to portions of the single colorant version of the image that are associated with the conflicting colors--.

Accordingly, for these additional reasons, it is respectfully submitted that the assertion of the Advisory Action that "Applicant failed to previously claim spatially modulating a plurality of image portions associated with a plurality of selected conflicting colors" represents a **clear error** of the Advisory Action and Applicant's Amendment I is entitled entry and due consideration. Accordingly, Pre-Appeal Brief review is requested.

Clear Errors of the Final Office Action

Clear errors of the Final Office Action, which was mailed January 10, 2008, are identified throughout Applicant's Amendment I (After Final) which was submitted electronically on February 21, 2008, but which was denied entry. Similar remarks were provided in Applicant's Response H (which was entered).

A summary of the present application is provided on pages 7 and 8 of Amendment I.

The cited reference (Ito) is discussed on pages 8 and 9 of Amendment I.

Pages 9-13 of Amendment I identify **clear errors** of the Office Action that are highlighted by the Response to Arguments section found on pages 5-6 of the Office Action. The identified errors include **clear errors of fact**, lack of responsiveness of the Office Action and the premature nature of the finality of the rejections.

For example, at the bottom of page 9, Amendment I points out that the Office Action overlooks and does not respond to arguments made on page 5 of Applicant's Response H. Those arguments are summarized and **clear errors** related to the rejection of **claim 10** are discussed. Toward the top of page 10, the inappropriate nature of the finality of the rejection is addressed. In the second half of page 10 through the top of page 11, errors in the characterization of the Applicant's arguments related to **claim 10** and **clear errors** of the Office Actions related thereto are identified. The attention of the reviewers is directed thereto.

The lack of responsiveness of the Office Action with regard to arguments made regarding **claim 12** and the inappropriate nature of the finality of the rejection related thereto are discussed in the top half of page 11.

Clear errors of fact related to the rejection of **claim 13** are discussed on pages 11 and 12 of Amendment I. In this regard, it is noted that the discussion at the top of page 12 includes two typographical errors. At the end of line 5, the word --if-- should be the word --is--. In line 12, --claim 3-- should read "claim 13".

The premature nature of the rejection of **claim 21** and **clear errors** related thereto are briefly discussed at the middle of page 12. **Clear errors of fact** related to the rejection of **claim 23** and the assertion of the Office Action that the word "hue" means "lightness" are discussed in the last two paragraphs of page 12 and the top portion of page 13.

With regard to the actual rejections made in the Final Office Action, **clear errors** are identified on pages 13-18 of Applicant's Amendment I and/or on pages 4-7 of Applicant's Response H (which was filed electronically on October 23, 2007).

For example, on page 13 of Amendment I, it is noted that MPEP §2131 requires that for a claim to be anticipated: "The identical invention must be shown in as complete detail as is contained in the...claim." and that "The elements must be arranged as required by the claim." For instance, at the bottom of page 13 and top of page 14, it is noted that the Office Action cites portions of columns 3 and 4 of Ito and implies that the cited portions disclose an image discriminating unit that detects color components, which are accumulated in a histogram and classified based on a threshold of hue values." However, even if those assertions are correct, none of that discloses or suggests an image analyzer that is operative to find and classify conflicting colors in a color image as is recited in **claim 10**. Ito does not disclose or suggest looking for, finding and classifying conflicting colors. It is respectfully submitted that Ito applies some pattern to the black and white version of every color in an image. Accordingly, Ito does not disclose or suggest at least this aspect of the subject matter recited in **claim 10** and the assertion that **claim 10** is anticipated by Ito represents a **clear error** of the Office Action. Similar arguments are presented in the middle of page 4 of Response H.

The middle portion of page 14 points out that the cited portions of columns 1 and 2 do not include the subject matter for which they are relied. Nothing in the cited portions of columns 1 and 2 disclose or suggest adding spatial modulations to single colorant versions **of only the conflicting colors** within the single colorant version of a color image, as recited in **claim 10**. Accordingly, the assertions of the Office Action that this element of **claim 10** is anticipated by Ito represents **clear errors** of the Office Action. Similar arguments are presented at the bottom of page 4 and top of page 5 of Response H.

Clear errors of fact presented in the Office Action with regard to the rejection of dependent **claims 12 and 13** are discussed on pages 15 and 16 of Amendment I and/or pages 5 and 6 of Response H.

Clear errors of the Office Action with regard to the rejection of independent **claim 21** are discussed on pages 16 and 17 of Amendment I and on pages 6 and 7 of Response H. For example, it is noted that the Office Action at once asserts that Ito discloses examining the image to find conflicting colors in the image and then, in an apparent acknowledgment that Ito makes no such disclosure, summarizes the cited portion of Ito as disclosing determining the brightness

data; and using the brightness data and the histogram peaks in determining which pixels to apply a pattern.

However, even if this assertion of the Office Action were correct (which is disputed), even the summary of the disclosure of Ito provided by the Office Action does not disclose or suggest examining an image **to find conflicting colors**. Furthermore, the assertion of the Office Action that Ito discloses “determining which pixels to apply a pattern” is traversed. Nothing in Ito discloses or suggests anything other than applying a pattern to **all** pixels. As depicted in Fig. 7 and Fig. 17 of Ito, and the text associated therewith, one way or another, Ito associates every pixel in the image of Ito with one of three ranges associated with one of three peaks and each of those peaks is associated with a pattern (e.g., column 6, lines 5-67). Accordingly, Ito does not disclose or suggest selectively spatially modulating a portion of the single colorant version of the image that is associated with one of the conflicting colors as recited in **claim 21**. Accordingly, the assertions of the Office Action that **claim 21** is anticipated by Ito represents **clear errors** of the Office Action.

For all of the foregoing reasons, as well as the reasons identified in at least the cited portions of Amendment I (After Final) and in at least the cited portions of Response H of the Applicant and to which the attention of the reviewers is respectfully directed, the Office Actions include **clear errors** and Pre-Appeal Brief review is once again respectfully requested.